Poverkhnost Rentgenovskie Sinkhronnye i Nejtronnye Issledovaniya 1994 N10-11, pages 125-127

Polishing surface layer of LiYF4 single crystal

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Abstract

By using methods of optical microscopy, microhardness and fast electrons diffraction in reflection mode it was determined that after mechanical polishing the depth of distorting layer is about 30 μm. Optimal results for layer etching were obtained by using KOH at 60°. The distortionless surface at LiYF4 single crystal was produced by mechanical polishing with chemical and ion-beam etching.